This worksheet is homework. Please keep it with your homework for any homework checks.

Use properties of exponents to solve the following equations for $x$.

**1**. $3^x = 81$

**2**. $3^x = 9^2$

**3**. $4^{2x} = 16^{1/2}$

**4**. $3^{x+1} = 9^{2x}$

**5**. $5^{2x} = \dfrac{1}{25}$

**6**. $2^{5x+3} = \dfrac{1}{8}$

**1**. $x = 4$     **2**. $x = 4$     **3**. $x = \dfrac{1}{2}$     **4**. $x = \dfrac{1}{3}$     **5**. $x = -1$     **6**. $x = -\dfrac{6}{5}$